

CLAIMS

1. A molding method using ultrasonic vibration
in which a resin material in a molten state is filled
5 into a cavity of a mold and cooled down to obtain a
product in a predetermined shape, the method being
characterized by:

preparing the mold having a product cavity to
mold the product, a dummy cavity to mold a dummy product,
10 and a runner by which the product cavity and the dummy
cavity are connected;

filling the resin material into the product
cavity and supplying the resin material in the molten
state to at least part of the dummy cavity; and

15 applying the ultrasonic vibration to the resin
material in the dummy cavity at predetermined timing.

2. A molding method using ultrasonic vibration
in which a resin material in a molten state is filled
20 into a cavity of a mold and cooled down to mold a product
in a predetermined shape, the method being characterized
by:

preparing the mold having a plurality of product
cavities to mold the products, a runner by which the
25 product cavities are connected to each other, and a resin
pit provided at a halfway part of the runner;

supplying the resin material to the resin pit and
filling the resin material into all of the plurality of
product cavities; and

30 applying the ultrasonic vibration to the resin

material in the resin pit at predetermined timing.

3. The molding method using the ultrasonic vibration according to claim 1 or 2, characterized in
5 that the predetermined timing is after start of supply of the resin material to at least part of the dummy cavity or the resin pit and while the resin material in the runner has a predetermined viscosity.

10 4. The molding method using the ultrasonic vibration according to any one of claims 1 to 3, characterized in that the ultrasonic vibration is applied while a compressed state is maintained after the resin material is filled into the product cavity and compressed.

15 5. The molding method using the ultrasonic vibration according to any one of claims 1 to 4, characterized in that the ultrasonic vibration is applied so that an amount of the resin material flowing into the
20 product cavity from the dummy cavity and air gaps other than the product cavity is in a range of 0.1% by volume to 5% by volume of the resin material filled into the product cavity.

25 6. The molding method using the ultrasonic vibration according to any one of claims 1 to 5, characterized in that the ultrasonic vibration is applied immediately after the filling of the resin material is started and until a gate in communication with the
30 product cavity is sealed.

7. The molding method using the ultrasonic vibration according to any one of claims 1 to 6, characterized in that a nozzle of a molding machine to supply the resin material to the mold is closed immediately after the filling of the resin material is completed.

8. The molding method using the ultrasonic vibration according to claim 7, wherein the product is an optical lens.

9. The molding method using the ultrasonic vibration according to claim 7, characterized in that the optical lens is a spectacle lens, and a step of subjecting the obtained spectacle lens to a surface treatment is further added.

10. An optical lens characterized by being manufactured by a molding method according to claim 8 or 9.

11. A molding machine in which a resin material is filled into a cavity formed in a mold and compressed to mold a product in a predetermined shape, the molding machine being characterized by comprising:

the mold having a product cavity to mold the product, a dummy cavity to mold a dummy product, and a runner by which the product cavity and the dummy cavity are connected;

ultrasonic wave application means for applying ultrasonic vibration to the resin material in the dummy cavity; and

control means for controlling application timing
5 of the ultrasonic vibration by the ultrasonic wave application means.

12. A molding machine in which a resin material into a cavity formed in a mold and compressed to mold a
10 product in a predetermined shape, the molding machine being characterized by comprising:

the mold having a plurality of product cavities to mold the products, a runner by which the product cavities are connected to each other, and a resin pit
15 provided at a halfway part of the runner;

ultrasonic wave application means for applying ultrasonic vibration to the resin material in the resin pit; and

control means for controlling application timing
20 of the ultrasonic vibration by the ultrasonic wave application means.

13. The molding machine according to claim 11 or 12, characterized in that timing when the control means
25 applies the ultrasonic vibration is after start of supply of the resin material to at least part of the dummy cavity or the resin pit and while the resin material in the runner has a predetermined viscosity.

30 14. The molding machine according to any one of

claims 11 to 13, characterized in that the timing when the control means applies the ultrasonic vibration is while a compressed state is maintained after the resin material is filled into the product cavity and compressed.

5

15. The molding machine according to any one of claims 11 to 14, characterized in that the mold has a sprue in communication with the runner in addition to the runner.

10

16. The molding machine according to any one of claims 11 to 15, characterized in that the resin pit located at a midpoint of the runner.

15

17. The molding machine according to any one of claims 11 to 16, wherein the product is an optical lens.